

Utilization of Connecticut and Massachusetts Hospitals by Rhode Island Residents, 1997 - 2003

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Despite the generally easy access to inpatient care throughout the state, a proportion of Rhode Island residents receive inpatient care in hospitals in neighboring states, primarily Massachusetts and Connecticut. To obtain a complete picture of the health of Rhode Islanders, information on the health status of residents who are cared for out-of-state must be obtained and added to the information available from in-state health care providers. This is particularly important for inpatient discharges, since those patients tend to be most severely impacted by illnesses and injuries.

A patient state-of-residence analysis conducted by the Healthcare Cost and Utilization Project indicates that discharges of Rhode Island residents from Rhode Island, Connecticut, and Massachusetts hospitals account for 99.5% of Rhode Islanders hospitalized in the 35 states included in the analysis in 2002.¹ Thus, data on residents hospitalized in Connecticut and Massachusetts hospitals, combined with data from Rhode Island hospitals, is sufficient to generate accurate estimates of population-based rates for monitoring disease and injury in the state's population. This report presents selected summary statistics on Rhode Island residents utilizing Connecticut and Massachusetts hospitals during the seven-year period 1997-2003, and examines the geographic patterns of Rhode Island residents seeking care out-of-state.

Methods. Since October 1, 1989, acute-care hospitals in Rhode Island report to the Department of Health, Office of Health Statistics, a defined set of data items on each inpatient discharge, including information on patient demographics, clinical data, charges and expected pay source. Similarly, hospitals in Massachusetts and Connecticut report discharge data to the Division of Health Care Finance and Policy, Office of Health and Human Services and the Office of Health Care Access, respectively. The Connecticut Office of Health Care Access provided summary data on Rhode Island residents based on zip code of residence for discharges occurring 1997-2003. The Massachusetts Division of Health Care Finance and Policy provided patient-level data files for the same time period to the Rhode Island Department of Health, who extracted data on Rhode Island residents using zip code. For Massachusetts, the Rhode Island Department of Health was able to use Rhode Island patterns to estimate city/town of residence for discharges with zip codes that overlap town boundaries. Diagnoses and procedures are coded in the International Classification of Diseases, 9th Revision,

Clinical Modification (ICD-9-CM), and were grouped as for published national data.² This analysis excludes discharges of newborn infants.

Results. During 1997 – 2003, there were 4,207 and 38,724 non-newborn hospital discharges of Rhode Island residents from Connecticut and Massachusetts hospitals, respectively, an average of 601 discharges per year from Connecticut hospitals and 5,532 from Massachusetts hospitals. There were a total of 275 newborns discharged from Connecticut and 2,569 from Massachusetts. Annual utilization increased over the seven-year period from 536 to 632 discharges for Connecticut and 5,128 to 6,132 discharges from Massachusetts. Since the utilization of Rhode Island hospitals by Rhode Island residents also increased steadily over this time period, the annual percentage of discharges represented by Massachusetts and Connecticut hospitals varied little, ranging from 4.6% to 5.0% for Massachusetts and remaining constant at 0.5% for Connecticut.

During the most recent three-year period, 2001-2003, Rhode Island hospitals were net exporters of inpatient care to residents of both Massachusetts and Connecticut. There was an annual average of 6,864 discharges of Massachusetts residents from Rhode Island hospitals compared to an average of 5,897 discharges of Rhode Island residents from Massachusetts hospitals; these volumes translate into a net positive ratio of 1.17 patients coming from Massachusetts for each patient going there. Similarly, there was an annual average of 1,936 discharges of Connecticut residents from Rhode Island hospitals compared to an average of only 635 discharges of Rhode Island residents from Connecticut hospitals, for a net positive ratio of 3.05 during this three-year period.

Rhode Island residents age 45-64 years were the most likely to be treated out-of-state in both Massachusetts and Connecticut. (Figure 1) Those age 0-14 years were the least likely to seek care in Connecticut whereas those over 65 years were the least likely to seek care in Massachusetts.

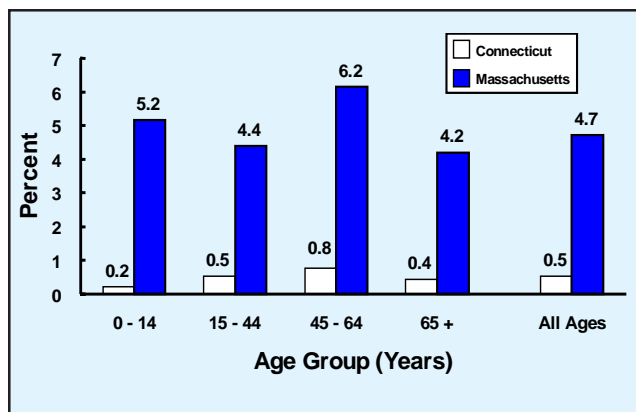


Figure 1. Inpatient Discharges of Rhode Island Residents From Connecticut and Massachusetts Hospitals, by Age Group and State of Hospital, 1997 – 2003

Table 1. Most Common Diagnosis (First-Listed), by State of Hospitalization, Rhode Island Residents, 1997 – 2003

Rank	Connecticut	Massachusetts	Total
1	Heart disease (1,297)	Heart disease (5,486)	Heart disease (6,783)
2	Deliveries (241)	Malignant neoplasms (3,494)	Malignant neoplasms (3,662)
3	Psychoses (177)	Deliveries (2,546)	Deliveries (2,787)
4	Malignant neoplasms (168)	Pneumonia (1,092)	Fractures, all sites (1,215)
5	Intervertebral disc disorders (164)	Fractures, all sites (1,065)	Pneumonia (1,140)
6	Fractures, all sites (150)	Osteoarthritis and allied disorders (959)	Cerebrovascular disease (1,074)
7	Cerebrovascular disease (149)	Cerebrovascular disease (925)	Osteoarthritis and allied disorders (1,024)
8	Osteoarthritis and allied disorders (65)	Chronic bronchitis (678)	Psychoses (714)
9	Pneumonia (48)	Benign neoplasms (623)	Chronic bronchitis (705)
10	Benign neoplasms (48)	Psychoses (537)	Benign neoplasms (671)

The most common reasons for hospitalization differed slightly between Connecticut and Massachusetts hospitals. (Table 1) Heart disease was the most common reason for both, with 1,297 discharges of Rhode Island residents from Connecticut and 5,486 discharges from Massachusetts. Deliveries (241 discharges), psychoses (177 discharges) and malignant neoplasms (168 discharges) were the next leading reasons for admission for Connecticut. Malignant neoplasms (3,494 discharges), deliveries (2,546 discharges) and pneumonia (1,092 discharges) ranked second, third, and fourth for Massachusetts.

Rhode Island towns bordering Connecticut and Massachusetts had the highest percent of residents seeking care out-of-state. (Figure 2) Almost three-fourths of hospitalizations of Tiverton and Little Compton residents occurred out-of-state, primarily to Massachusetts

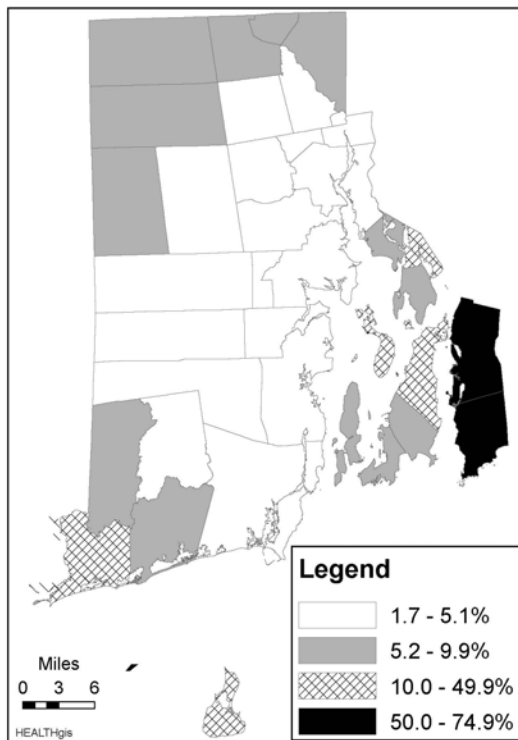


Figure 2. Inpatient Discharges of Rhode Island Residents From Connecticut and Massachusetts Hospitals, by Town of Residence, 1997 - 2003

hospitals (74.9% and 69.5%, respectively). Portsmouth (25.4%) and Warren (10.7%) were the only other towns whose residents received at least 10% of their care in Massachusetts. Westerly (8.8%), New Shoreham (5.6%), Foster (4.4%), Charlestown (4.2%) and Hopkinton (3.9%) were the towns with the highest percent of residents seeking out-of-state inpatient care in Connecticut. The towns with the lowest proportion of residents seeking care out-of-state were West Warwick (1.7%), Providence (2.0%) and Johnston (2.0%).

During 1997-2003, the largest numbers of discharges of Rhode Island residents were from Massachusetts hospitals located in Fall River and Boston. Southcoast Health System – Charlton and St. Anne's Hospital in Fall River had the highest numbers of discharges with 9,102 and 5,802, respectively. Brigham and

Women's Hospital (3,731) and Massachusetts General Hospital (3,157), both in Boston, had the next largest numbers. These four hospitals comprise 56.2% of the discharges from Massachusetts hospitals. The top four Connecticut hospitals account for 80.6% of Rhode Island residents hospitalized in Connecticut. Yale-New Haven Hospital, located in New Haven, had 1,326 discharges, followed by Lawrence and Memorial Hospital in New London (997), William W. Backus Hospital in Norwich (680) and Day Kimball Hospital in Putnam (388).

Discussion. Because more than 5% of hospitalizations of Rhode Island residents occur out-of-state, it is important to include residents seeking care out-of-state when describing and monitoring the health care utilization and disease patterns of Rhode Islanders. The hospitals in Massachusetts and Connecticut with the greatest number of discharges of Rhode Island residents include a mix of hospitals that are located close to the Rhode Island border and hospitals located in more distant urban centers, such as Boston and New Haven. This geographic distribution suggests that the utilization is driven by a combination of geographic proximity and demand for specialty care. Further analysis examining the specific diagnoses and procedures of out-of-state discharges is needed to determine whether the demand for specialty care results from a lack of particular types of specialty care in Rhode Island, from a perception of better care out-of-state, or from established referral practices.

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